



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/508,793

05/03/2005

Akira Ohba

046124-5322

3905

55694 7590 04/08/2008
DRINKER BIDDLE & REATH (DC)
1500 K STREET, N.W.
SUITE 1100
WASHINGTON, DC 20005-1209

EXAMINER

HO, ALLEN C

ART UNIT

PAPER NUMBER

2882

MAIL DATE

DELIVERY MODE

04/08/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/508,793	Applicant(s) OHBA ET AL.	
	Examiner Allen C. Ho	Art Unit 2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 5 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 October 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20071220, 20080225</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagai *et al.* (U. S. Patent No. 5,434,901) in view of Chase and Silk (Applied Optics 14, 1975).

With regard to claim 1, Nagai *et al.* disclosed an x-ray image magnifying device comprising: an illumination optical system (**81**) for irradiating the x-rays emitted from an x-ray source to a sample; an objective lens (**83**) configured by a grazing incident mirror (a Wolter optical system) composed of a rotary hyperboloidal surface and a rotary ellipsoidal surface (column 9, line 58 - column 10, line 5) for magnifying and focusing the x-ray having penetrated through the sample onto a predetermined position (column 13, line 66 - column 14, line 2); and an x-ray image detecting means (**85**) for detecting an x-ray image focused by the objective lens.

However, Nagai *et al.* failed to disclose a magnification changing means for changing the magnification of the x-ray image by moving the x-ray image detecting means along an optical axis direction, and a moving stage for moving the sample along the optical axis direction to adjust a distance between the sample and the objective lens.

Chase and Silk disclosed that the magnification of a Wolter mirror is determined by the ratio of its image distance and object distance (p. 2097, column 1, last paragraph).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a magnification adjusting means for moving the x-ray image detecting means and a moving stage for moving the sample along the optical axis direction, since a person would be motivated to select a magnification appropriate for viewing a sample.

With regard to claim 2, Nagai *et al.* and Chase and Silk disclosed the x-ray image magnifying device according to claim 1, further comprising: a light irradiation means (Nagai *et al.* **31**) for irradiating the sample with a visible light or an ultraviolet light; and a light detecting means (Nagai *et al.* **35**) for detecting an image by a light which has penetrated through the sample had has been reflected by the objective lens.

With regard to claim 5, Nagai *et al.* and Chase and Silk disclosed the x-ray image magnifying device according to claim 1, wherein the x-ray image detecting means is moved so as to satisfy the following numerical express: $b=aM$ (this expression is automatically satisfied by a Wolter optic).

Allowable Subject Matter

3. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Amendment

4. Applicants' amendments filed 20 December 2007 with respect to claim 1 have been fully considered. The objections of claim 1 have been withdrawn.

Response to Arguments

5. Applicant's arguments filed 20 December 2007 have been fully considered but they are not persuasive.

With respect to the rejection of claims 1, 2, and 5 under 35 U.S.C. 103(a) as being unpatentable over Nagai *et al.* (U. S. Patent No. 5,434,901) in view of Chase and Silk (Applied Optics 14, 1975), the applicants argue that neither references discloses a magnification changing means for moving the x-ray image detecting means and a moving stage for moving the sample. The examiner respectfully disagrees. Chase and Silk provided ample suggestions and/or motivation to change the magnification of the x-ray microscope disclosed by Nagai *et al.* Chase and Silk specifically disclosed that they performed ray-tracing studies with various magnifications (p. 2097, column 1, last paragraph), which clearly suggest that their imaging systems are capable of changing magnifications. Furthermore, Chase and Silk disclosed one particular configuration in which the object distance (*i. e.*, the distance between the sample and the objective lens) is 20 cm and the image distance (*i. e.*, the distance between the x-ray detecting means and the objective lens) is 100 cm. A person skilled in the art would immediately recognize that the magnification is a function of the object distance and the image distance, and provide appropriate means to change the object distance and the image distance. Nagai *et al.* disclosed a microscope. What makes a microscope a valuable tool is that it is capable of changing its magnification. Indeed; anyone who has ever used a microscope knows that one could change the magnification by changing the object distance and/or the image distance.

Therefore, the rejection is being maintained.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen C. Ho whose telephone number is (571) 272-2491. The examiner can normally be reached on Monday - Friday from 9:00 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward J. Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Allen C. Ho/
Primary Examiner
Art Unit 2882

31 March 2008